

SALTON SEA ADVISORY COMMITTEE MEETING

December 8, 2005

9:00 – 2:00

Torres Martinez Reservation, Thermal, CA

Welcome and Introductions

Rick Hoffman, Riverside County, welcomed the Advisory Committee members and led introductions of those present (see attached list).

Updates from the Resources Agency

Mr. Hoffman noted that there is limited time to complete the ecosystem restoration study (ERS) and programmatic environmental impact report (PEIR). The Resources Agency appreciates the efforts of the Committee members, and encourages the members to continue working together to reach resolution on the various critical items.

Public Comments

The following public comments were provided:

- A member of the public noted that the ERS should consider aesthetic and quality of life values. Noise and pollution reduce property values and should be avoided. The desert ecosystem is fragile and the ERS should consider ecologically-friendly designs. Ecotourism should be encouraged.
- Joe Loya, Torres-Martinez Desert Cahuilla Indians, noted that the Tribal Council has adopted the Salton Sea Authority's plan for restoring the Sea and is moving forward with actions that complement that plan. However, various issues, such as air quality and habitat, have not been discussed with the Tribal Council. The abbreviated schedule called for in the authorizing legislation limits the Tribal Council's ability to consider these and related issues. Mr. Loya requested that the Tribe continue to be included in the decision-making process and that there be increased communication with the Tribal Council.

Salton Sea Authority Project Development Update

Ron Enzweiler, Salton Sea Authority (SSA), provided an update on the development of the SSA's Revitalization Plan (formerly called the North Lake plan). An overview of the SSA's various ongoing and planned studies and pilot projects was provided. The SSA completed the Recreation Opportunities and Economic Study and is in the process of finalizing Phase I of the Wetlands Master Plan. The SSA is working with the Wildlife Conservation Board on funding for Phase II of the Wetlands Master Plan. Planned projects include additional geotechnical investigations, water treatment system pilot testing, and development of a water quality model for the Sea.

Mr. Enzweiler briefly discussed the differences between Resources Agency's process and SSA's process. Mr. Enzweiler noted that the SSA is working on an agreement with the Imperial Irrigation District (IID) on future inflows to the Sea. The SSA is assuming a minimum future inflow of 750,000 acre-feet. Mr. Enzweiler indicated that the SSA design is self-mitigating for air quality impacts, because groundwater is believed to be present and in sufficient quantities to keep all exposed playa areas wet and non-emissive. Using the Metropolitan Water District of Southern California's (MWD's) Diamond Valley Reservoir as an example, the SSA also believes that construction of the major infrastructure elements can be completed in less than 10 years. Additionally, the SSA estimates that operation and maintenance of the project would cost about \$50 million annually. The SSA's inflow projections assume that the entire 800,000 acre-feet of 'mitigation water' will be used to maintain the elevation of the Sea.

The SSA will consider formalizing their Revitalization Plan at the SSA Board this afternoon.

Update on U.S. Bureau of Reclamation Activities

Mike Walker, U.S. Bureau of Reclamation (Reclamation), provided an update on Reclamation's Feasibility Study. Reclamation is working toward fulfilling the requirements of Public Law 108-361, which directs the Secretary of the Interior to prepare a Feasibility Study on a preferred alternative for restoration of the Sea.

As was described at a previous meeting, preparation of the Feasibility Study has been divided into two phases. Phase I includes the preparation of a Value Planning Study and will be completed shortly. As part of Phase I, Reclamation will select an alternative or alternatives for further analysis in Phase II. Reclamation is currently developing criteria to make this selection. Phase II includes preparation of the Feasibility Study on a preferred alternative(s), and will be initiated once the preferred alternative or alternatives are selected.

Reclamation will select its alternative(s) for analysis in its Phase II study prior to the State selection of alternatives for further analysis in its ERS and PEIR. Reclamation anticipates that their selection processes and alternative(s) will be consistent with the State's. The Torres Martinez Tribe requested that the Tribe be allowed to participate in Reclamation's preferred alternative selection process.

Based on a question from an Advisory Committee Member, Mr. Walker noted that the reports prepared by Reclamation to date are preliminary working documents and will not be released to the public until they are finalized. Reclamation has provided copies to the Department of Water Resources (DWR) and the SSA to coordinate efforts and share information. A few Committee members requested that Reclamation release any information that could be used to evaluate and narrow the range of alternatives. Mr. Walker said that the USBR is not ready to release the preliminary information; however, they will report on its progress and share as much information as possible at the next Committee meeting.

Based on a question from a Committee member, Mr. Walker noted that Reclamation and the State used a similar process to develop estimates of future inflows to the Sea and are using similar future inflow numbers.

Update on Project Status

Gwen Buchholz, CH2M HILL, provided an update on the status of the ERS and PEIR. The existing conditions and No Action Alternative descriptions for various resource areas are being completed, and should be available for review by the Committee members shortly. In addition, the future inflows are currently being revised based on input from Committee members and an inflows report should be available for review shortly. The Resources Agency would like a recommendation from the Committee on the final range of alternatives and sub-alternatives that should be analyzed in detail in the ERS and PEIR at the January 31, 2006 Committee meeting.

Identification of the Range of Alternatives

Ms. Buchholz provided an overview of the methodology to define the final range of alternatives. The approach to defining the range of alternatives included identification of restoration project objectives, development of a range of concepts, and narrowing the range based on broad screening criteria and existing laws and regulations. The existing laws and regulations used to narrow the range of concepts included the California Environmental Quality Act (CEQA) Statutes and Guidelines, the authorizing legislation, and other statutory mandates. CEQA provides guidance on defining a range of "feasible" alternatives, and the authorizing legislation provides direction on the overall ERS objectives. In addition, statutory mandates provide direction on a variety of legal and regulatory mandates that must be following such as avoiding or minimizing impacts to federal and state listed species.

With regard to the potential location of restoration actions, it is assumed that actions that occur outside of the existing Sea would be similar, although not identical, under all of the alternatives. These actions will be explored in more detail in future studies and project-level CEQA compliance. A Committee member suggested that actions on agricultural areas also be considered.

Overall, three restoration concepts are being considered, whole Sea concepts, partial Sea concepts, and minimal barrier concepts. These concepts are being modified based on the various objectives previously discussed by the Committee, the Work Groups, and the public.

Development of the Range of Alternatives

Ms. Buchholz provided an overview of the development of the range of alternatives. An overview of the various habitat, air quality, water quality, inflow, infrastructure, and construction phasing assumptions that have been made to develop and refine the configurations was provided and is summarized below:

Habitat Assumptions

The habitat assumptions include the following: (1) provide pupfish connectivity and protection; (2) provide a mosaic of habitat types in each configuration; (3) maximize habitat restoration in the southern end of the Sea; and, (4) protect other existing high-value wildlife areas. It was noted that there has been a variety of questions on the saline habitat complex, and Doug Barnum, U.S. Geological Survey, provided an overview of the function and purposed of these habitat areas.

Mr. Barnum noted that the saline habitat complex idea considers the range of areas/habitat types that birds generally use around the Sea. Protection and creation of snag habitat may not be a long-term solution as these dead trees are temporary and subject to corrosive and erosive activities. This habitat can be replaced by creating shallow habitat areas with berms and other habitat features. Biological needs of fish eating birds can also be accommodated by the saline habitat complex areas, and deeper areas would be constructed for fish and for fish-eating birds. Based on a question from an Advisory Committee member, selenium concentration in the saline habitat complex can be addressed with water treatment or mitigated by additional habitat areas. In addition, Mr. Barnum noted that Yuma clapper rail are not likely to utilize the saline habitat complexes.

Ms. Buchholz noted that expansion of freshwater areas is not currently being considered as part of the restoration project. There have been some recent discussions to include freshwater areas, but Mr. Barnum noted that various experts agree that a saline habitat complex with deeper water areas will provide for all of the current, existing migratory bird needs in the Salton Sea.

Air Quality Assumptions

Pamela Vanderbilt, CH2M HILL, provided an overview of the air quality assumptions for exposed playa and construction activities. With regard to the exposed playa areas, it is assumed that 100 percent of the exposed area that is not used for other land uses (such as habitat areas, canal, roads, etc.) will be managed. Research will be conducted to determine the emissivity of these exposed areas. If the soils are not emissive, then the area will be monitored to confirm that conditions do not change. If the soils are emissive, then air quality management (AQM) will be implemented. A variety of AQM options are under consideration. Some options would require water, such as water-efficient vegetation, while other options, such as use of chemical stabilizers, would not.

Ms. Vanderbilt noted that for the purposes of the water balance and costing, it is assumed that a proven dust control measure, water-efficient vegetation, would be needed on about 50 percent of the exposed playa for AQM. Originally, it was assumed that 100 percent of the exposed playa would need water-efficient vegetation for dust control; however, based on information from Owens Lake and other areas, it is likely that a portion of the playa will not be emissive. In addition, research may demonstrate the efficiency of other AQM methods that require less water than water-efficient vegetation. If less than 50 percent of the playa is emissive, or if other AQM methods are identified, then any excess funding and water

allocated to AQM can be used for habitat and other uses. A Committee member suggested that a range of percentages of exposed playa requiring AQM be used for the air quality analysis.

Based on a question from a Committee member, it was noted that research on existing and historical soil types, and their potential emissivity, is ongoing.

Ms. Vanderbilt discussed air quality requirements for construction emissions to be addressed in environmental studies. For projects of this scale, estimated construction-related emissions should be included in air quality management plans prepared by the regulatory agencies.

Water Quality Assumptions

Ms. Buchholz provided an overview of the water quality assumptions. Nutrients and selenium are the primary water quality concerns. Nutrients are of concern because high nutrient levels can lead to low dissolved oxygen and fish kills. A variety of management options for nutrients are being considered including removal of nutrients upstream of the Salton Sea through existing regulatory processes (Total Maximum Daily Loads), on-farm measures, and natural treatment, along with removal at the Salton Sea through minimum biological treatment. A Committee member noted that the restoration project should set standards or goals for nutrient reductions in the different project areas.

Selenium is also of concern because it can cause human and ecological health problems. Similar to the nutrient management options, both management options upstream and at the Salton Sea are being considered for selenium. Selenium removal may be possible in the Imperial and Coachella valleys, or using a more conventional water treatment process following the nutrient removal process at the Sea. Ways to reduce the ecological health risk, such as mitigation wetlands, are also being considered. A Committee member noted that selenium removal in the Upper Colorado River Basin may not produce cost-effective results in the Lower Colorado River Basin and the Imperial Valley area.

Inflow Assumptions

Ms. Buchholz provided an overview of the inflow assumptions. Under the No Action Alternative, the average annual inflows to the Salton Sea over the 75 year study period are projected to be about 958,000 acre-feet. With possible projects and actions that could occur over the 75 year study period, future inflows could be reduced to about 600,000 to 650,000 acre-feet based on statistical analysis of future uncertainties. This future "variability" inflow is being refined based on input from the Advisory Committee and others. The future inflow assumptions affect the sizing and phasing of infrastructure. For this study, it is proposed that large infrastructure facilities be sized and located to accommodate the lowest and highest average annual inflows over the 75 year study period.

Infrastructure Assumptions

Darryl Hayes, CH2M HILL, provided an overview of the infrastructure assumptions. A variety of facilities are being considered including barriers, perimeter dikes, berms, conveyance facilities such as canals and pipelines, pump stations and water treatment plants. The barriers are large facilities to "divide" the Sea, and will be subject to DWR's Division of Safety of Dams (DSOD) jurisdiction and Reclamation's Public Protection Guidelines. These facilities are assumed to be conservatively designed to minimize the risk of failure. Perimeter dikes are slightly smaller facilities that parallel the existing shoreline along a contour and they also serve to divide the Sea. These dikes will also be subject to DSOD jurisdiction and Reclamation's Public Protection Guidelines, and are assumed to be conservatively designed to minimize the risk of failure. Berms would be constructed of suitable compacted "Sea-floor" sediments and may not meet DSOD jurisdiction criteria.

Various rock sources and quarries are being considered for the construction of the barriers and other facilities; however, new rock quarries will have to be developed to support of the quantity, quality, and size necessary for the current designs. Quarry sites may need to be developed on both sides of the Sea if aggressive construction schedules are desirable. It is anticipated that the barrier and berm construction can be conducted partially in the wet. A variety of construction challenges exist for all of the infrastructure components.

Construction Phasing Assumptions

Construction of a large barrier in the Sea was estimated to take approximately 12 years after completion of the current ERS and PEIR process. This assumes that funding is available and that the project-level CEQA compliance can begin in early 2007. Based on a question from a Committee member, it was noted that direct and indirect construction impacts will be addressed in the PEIR.

Basis of Preliminary Cost Estimates

Initial draft costs were provided to facilitate the comparison of alternatives. These cost estimates are intended to provide a rough order of magnitude cost and, while, substantial work has been conducted to develop these initial costs, substantial work is still needed to refine them and develop final cost estimates. These initial costs estimates are conservative and will be refined as the alternatives are refined.

Proposed Final Range of Alternatives

Ms. Buchholz and Mr. Hayes provided an overview of the proposed final range of alternatives. Below is a summary of the alternatives and the related discussion. With the exception of the No Action/No Action Variability Baseline Alternative, all alternatives were based on future annual average inflows of about 650,000 acre-feet.

- **No Action Alternative and No Action Variability Baseline**—The No Action Alternative and No Action Variability Baseline provide a basis for the evaluation of impacts of the other proposed configurations. The No Action Alternative includes mitigation measures identified in the IID Water Conservation and Transfer Project, including mitigation measures for desert pupfish, and air quality management actions. This alternative does not stabilize the Sea's salinity or elevation nor would it provide additional new habitat. The "No Action Variability Baseline" includes the same features as the No Action Alternative; however, it shows how the alternative would function under a lower future inflow scenario (i.e., average annual inflows about 650,000 acre-feet).
- **North Sea Combined with Saline Habitat Complex**—The purpose of this configuration is to provide a deep, marine sea habitat in the northern portion of the Salton Sea. Under this alternative, a barrier would be constructed approximately 14 miles north of the existing mid-Sea creating a marine sea of about 40,000 acres. About 25,000 gross (18,000 wetted) acres of saline habitat complex would be created. Recirculation of water would be needed, and water treatment for flows to habitat areas (both Marine Sea and Saline Habitat Complex) may also be necessary. About 100.5 million cubic yards of materials would be needed for barriers, perimeter dikes and berms. Based on preliminary cost estimates, the capital costs for this alternative were estimated to be \$10 billion and annual operations and maintenance costs were estimated to be \$150 million (in 2005 dollars).
- **South Sea Combined with Saline Habitat Complex**—The purpose of this configuration is to provide a deep, marine sea habitat in the southern portion of the Salton Sea. Under this alternative, a barrier would be constructed approximately 10 miles south of the existing mid-Sea creating a marine sea of about 40,000 acres. About 25,000 gross (18,000 wetted) acres of saline habitat complex would be created. Recirculation of water would be needed, and water treatment for flows to habitat areas may also be necessary. About 77.3 million cubic yards of materials would be needed for barriers, perimeter dikes and berms. Based on preliminary cost estimates, the capital costs for this alternative were estimated to be \$9.2 billion and annual operations and maintenance costs were estimated to be \$150 million (in 2005 dollars).
- **Maximize Saline Habitat with North Sea**—The purpose of this configuration is to provide a deep, marine open water habitat in the northern portion of the Salton Sea and saline habitat in the southern portion of the Sea. Under this alternative, a barrier would be constructed approximately 13 miles north of the existing mid-Sea creating a marine sea of about 27,000 acres. About 50,000 gross (38,000 wetted) acres of saline habitat complex would be created. Recirculation of water would be needed, and water treatment for flows to habitat areas may also be necessary. About 82.3 million cubic yards of materials would be needed for barriers, perimeter dikes and berms. Based on preliminary cost estimates, the capital costs for this alternative were estimated to be \$9.8 billion and annual operations and maintenance costs were estimated to be \$150 million (in 2005 dollars).

- **Concentric Rings**—The purpose of this configuration is to preserve and expand existing shoreline habitat at the Salton Sea. Under this alternative, a perimeter dikes would be constructed to form two “rings” in the Sea, creating two marine “Seas” of about 66,000 acres in total. Circulation of water in the rings would be needed to maintain water quality, and water treatment for flows may also be necessary. About 60.8 million cubic yards of materials would be needed for the perimeter dikes. Based on preliminary cost estimates, the capital costs for this alternative were estimated to be \$7.9 billion and annual operations and maintenance costs were estimated to be \$140 million (in 2005 dollars).
- **Minimal Barrier**—This configuration would provide a substantial amount of created saline habitat areas along the outer portions of the Salton Sea to replace the eventual loss of the Sea’s existing shallow water and shoreline habitat. About 75,000 gross (65,000 wetted) acres of saline habitat complex would be created. About 30 million cubic yards of materials would be moved to create the berms. Based on preliminary cost estimates, the capital costs for this alternative were estimated to be \$7.3 billion and annual operations and maintenance costs were estimated to be \$160 million (in 2005 dollars).

Some Committee members expressed concerns that this alternative is too complex and should be refined to be less intensive. It was noted that the State is trying to make the various alternatives meet a variety of different and sometimes conflicting needs. To simplify the alternatives, guidance is requested from the Committee on the priority of the different needs and an acceptable amount of risks. The State will work with the Habitat and Alternatives Work Groups to simplify the Minimal Barrier Alternative.

- **Import/Export Configuration**—The purpose of this configuration is to provide a whole Sea configuration that maintains a stable marine Sea at a constant elevation and salinity that is similar to what is there today. Two routes have been evaluated, one to the Gulf of California and one to Pacific Ocean. The route to the Gulf of California is about 150 miles each way, and the route to the Pacific Ocean is about 100 miles each way. Based on preliminary cost estimates, the capital costs for this alternative were estimated to be \$49 billion and annual operations and maintenance costs were estimated to be \$690 million (in 2005 dollars) for the route to the Gulf of California. Cost estimates are not available at this time for the route to the Pacific Ocean; however, those costs are anticipated to be higher.

The Committee discussed the Import/Export Configuration in detail and voted to not carry the alternative forward for further detailed analysis. The alternative will be included in the ERS and PEIR but no further analysis will be conducted.

A Committee member suggested that more detailed cost estimates include a line-item for the pupfish connectivity component of each alternative. It was noted that the need for pupfish connectivity was included in the IID Water Conservation and Transfer Project, and therefore, this component may qualify for some of the mitigation funds from that project. Additionally, connectivity actions are coordinated through the Pupfish Technical Committee established as part of the IID Water Conservation and Transfer Project.

Based on a question from a Committee Member, it was noted that most of the alternatives can be phased over time as funds become available and can also accommodate actions by others, such as changes in land uses on exposed areas.

Summary of Action Items

DWR and DFG will also work on modifying the Minimal Barrier alternative based on comments from the Advisory Committee Members. The Resources Agency would like a recommendation from the Committee on the final range of alternatives and sub-alternatives that should be analyzed in detail in the ERS and PEIR at the January 31, 2006 Committee meeting.

The next Advisory Committee meeting will be held on January 31, 2006 at the California Association of Counties in Sacramento.

Handouts

Copies of the following presentations and related materials:

- Update on Project Status and Schedule
- Salton Sea Authority Project Status Report
- Identification of the Range of Alternatives
- Development of the Range of Configuration
- Proposed Final Range of Alternatives
- Summary Sheets:
 - North Sea Combined Configuration
 - North Sea and Minimal Barrier Configuration
 - South Sea Combined Configuration
 - Concentric Rings Configuration
 - Import/Export Configuration, Gulf of California or Pacific Ocean
 - Minimal Barrier Configuration
 - No Action Alternative and No Action Variability Baseline
 - Air Quality Management for Construction and Operations
 - Air Quality Management for Exposed Playa
 - Infrastructure: Water Conveyance Facilities
 - Infrastructure: Barriers, Perimeter Dikes, and Berms
 - Fish and Wildlife Habitat Purpose

ATTENDANCE

Advisory Committee Members or Alternates Present:

Marie Barrett, New River Citizens Congressional Task Force
Bart Christensen, State Water Resources Control Board
Fred Cagle, Sierra Club
Michael Cohen, Pacific Institute
Kim Delfino, Defenders of Wildlife
Mark Hennelly, California Waterfowl Association
Rick Hoffman, Riverside County
Leif Horwitz, U.S. Geological Survey
Al Kalin, Imperial County Farm Bureau
Julia Levin, Audubon California
Sylvia Oey, Air Resources Board
Larry Purcell, San Diego County Water Authority
Alicia Reed, Torres-Martinez Desert Cahuilla Indians
Steve Robbins, Coachella Valley Water District
Reyes Romero, Imperial County Air Pollution Control District
John Scott, The Metropolitan Water District of Southern California
Mike Walker, U.S. Bureau of Reclamation
Dan Walsworth, U.S. Fish and Wildlife Service
Bruce Wilcox, Imperial Irrigation District
John Wohlmuth, Coachella Valley Association of Governments
Nancy Wright, Regional Water Quality Control Board
Gary Wyatt, Imperial County